

BOBBY JINDAL
GOVERNOR



HAROLD LEGGETT, Ph.D.
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.:

Robert Hicks
Entergy Services, LLC
Parkwood Two Bldg.
10055 Grogans Mill Rd MU T-PKWD-4
The Woodlands, TX 77380

RE: PSD-LA-651(M-1), Ouachita Power Generating Plant, Entergy Arkansas, L.L.C., Agency Interest No. 83613, Sterlington, Ouachita Parish, Louisiana

Dear Mr. Hicks:

Enclosed is your permit, PSD-LA-651(M-1). This modification authorizes emissions resulting from startup and shutdown from the combined cycle units. The permit number cited above and the Agency Interest (AI) No. 83613 should be referenced in future correspondence regarding this facility.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

Should you have any questions concerning the permit, contact Dustin Duhon at 225-219-3057.

Sincerely,

Cheryl Sonnier Nolan
Assistant Secretary

Date

CSN:dcd

c: Northeast Regional Office
US EPA Region VI

PSD-LA-651(M-1)

**AUTHORIZATION TO CONSTRUCT AND OPERATE A NEW FACILITY
PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION
REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE,
LAC 33:III.509**

In accordance with the provisions of the Louisiana Environmental
Regulatory Code, LAC 33:III.509,

Entergy Arkansas, Inc.
11140 Hwy 165 N
Sterlington, LA 70113

is incorporating startup and shutdown emissions, is making minor corrections to the calculation methodologies to improve accuracy, and is authorized to make minor changes at the Entergy Arkansas, Inc. – Ouachita Power Generating Plant near

Sterlington
Ouachita Parish, Louisiana

subject to the emissions limitations, monitoring requirements, and other conditions set forth hereinafter.

Signed this _____ day of _____, 2009.

Cheryl Sonnier Nolan
Assistant Secretary
Office of Environmental Services
Louisiana Department of Environmental Quality

BRIEFING SHEET

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1)

PURPOSE

To incorporate emissions resulting from startup and shutdown of the combined cycle units, CTG 1, CTG 2, and CTG 3. These emissions are existing and do not represent an actual emissions increase. Also, to indicate that particulate matter emissions limitations that apply to the cooling towers (CT1 – CT3) apply to PM₁₀ and not total suspended particulate.

RECOMMENDATION

Approval of the proposed construction and issuance of a permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division.

PROJECT DESCRIPTION

Natural gas will be fired in the gas turbines to drive electrical generators. Hot exhaust from the gas turbines will flow into the heat recovery steam generators (HRSG) where heat will be recovered to generate steam. Produced steam will be sent to the steam turbines to generate electricity. Duct burners at the inlet of the HRSGs will allow additional natural gas to be fired during the peak demands periods.

PSD-LA-651 authorized Ouachita Power to construct an 800 MW power station which will house three combined cycle generation units. Each unit consists of a 170 MW gas turbine, a 300 MM BTU/hr duct burner, a HRSG, a steam turbine, a heater, a pressurized ammonia tank, and a water cooling tower. Other equipment at the station includes an auxiliary boiler, a sulfuric acid tank, and a firewater pump. Estimated emissions from the station in tons per year, as prepared for PSD-LA-651, are as follows:

<u>Pollutant</u>	<u>Proposed Emissions</u>	<u>PSD De Minimis</u>
PM ₁₀	316.07	15
SO ₂	151.79	40
NO _x	614.28	40
CO	813.96	100
VOC	96.62	40
NH ₃	293.10	-
Methane/Ethane	139.56	-
PM (Not including PM ₁₀)	126.30	25

BRIEFING SHEET

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1)

Estimated emissions from the station in tons per year, as prepared for PSD-LA-651(M-1), are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>	<u>PSD De Minimus</u>
PM ₁₀	316.07	442.01	+ 125.94*	15
SO ₂	151.79	151.38	- 0.41	40
NO _x	614.28	579.32	- 34.96	40
CO	813.96	769.19	- 44.77	100
VOC	96.62	96.54	- 0.08	40
PM (Not Including PM ₁₀)	126.30	-	- 126.30	25

* Emission change due to difference in calculation methodology. In Permit No. 2160-00111-V0, the particulate emissions from the Cooling Towers (EQTs 7 – 9) were considered to be total suspended particulate and were calculated separately from PM₁₀. In this permit, the emissions from the cooling towers are considered to be PM₁₀. If the emissions from each of the cooling towers are added to the PM₁₀ "Before" value above, the result is 442.37 tons per year. This represents a permitted decrease of 0.36 tons per year.

TYPE OF REVIEW

PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions from the proposed station are above PSD significance levels. Therefore, the requested permit was reviewed in accordance with PSD regulations for PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions.

BEST AVAILABLE CONTROL TECHNOLOGY

PM/PM₁₀, SO₂, NO_x, CO and VOC emissions are above PSD significance levels and must undergo PSD analysis, which was represented in Permit No. PSD-LA-651. The selection of control technology for PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions was based on the BACT analysis using a "top down" approach and included consideration of control of toxic materials.

Low NO_x burners (LNB) and selective catalytic reduction (SCR) in combination with proper operating and maintenance practices, and using natural gas as fuel are determined as BACT for PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions from the gas turbines and duct burners. Low NO_x burners (LNB) in combination with proper operating and maintenance practices and using natural gas

BRIEFING SHEET

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1)

are determined as BACT for PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions from the heaters and the auxiliary boiler. Proper engine design, proper operating and maintenance practices, and using low sulfur fuels are determined as BACT for PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions from the fire water pump and emergency generator. Integrated drift eliminators are determined as BACT for PM emissions from the water cooling towers.

With PSD-LA-651(M-1), BACT for emissions of NO_x from the gas turbines during periods of startup and shutdown is determined to be no additional controls.

With PSD-LA-651(M-1), BACT for emissions of CO from the gas turbines during periods of startup and shutdown is determined to be good combustion practices.

AIR QUALITY IMPACT ANALYSIS

Prevention of Significant Deterioration regulations require an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed facility.

With PSD-LA-651, screening dispersion modeling indicates maximum ground level concentrations of PM/PM₁₀, SO₂, NO_x, and CO are below the preconstruction monitoring exemption levels and the ambient significance levels. No preconstruction monitoring or increment analysis or refined modeling is required.

With PSD-LA-651(M-1), screening dispersion modeling indicates maximum ground level concentrations of PM/PM₁₀ are below the National Ambient Air Quality Standards.

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed facility, nor will any Class I area be affected. Approximately 25 new permanent jobs will be created.

PROCESSING TIME

Application Dated: December 14, 2004

Application Received: January 10, 2005

Additional Information Received: September 14, 2006; February 12, 2009; April 30, 2009;
May 1, 2009; May 4, 2009

Effective Completeness: May 5, 2009

PUBLIC NOTICE

A notice requesting public comment on the permit was published in *The Advocate*, Baton Rouge, Louisiana, on <date>; and *The News-Star*, Monroe, Louisiana, on <date>. All comments will be considered prior to final permit decision.

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

I. APPLICANT

Entergy Arkansas, Inc.
11140 Hwy 165 N
Sterlington, LA 70113

II. LOCATION

Ouachita Power Generating Plant is located at the corner of Old Sterlington and Ouachita City Roads, north of Sterlington. UTM coordinates are 587.14 kilometers East and 3618.84 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

Natural gas will be fired in the gas turbines to drive electrical generators. Hot exhaust from the gas turbines will flow into the heat recovery steam generators (HRSG) where heat will be recovered to generate steam. Produced steam will be sent to the steam turbines to generate electricity. Duct burners at the inlet of the HRSGs will allow additional natural gas to be fired during the peak demand periods.

With Permit No. PSD-LA-651, Ouachita Power proposes to construct an 800 MW power station which will house three combined cycle generation units. Each unit consists of a 170 MW gas turbine, a 300 MM BTU/hr duct burner, a HRSG, a steam turbine, a heater, a pressurized ammonia tank, and a water cooling tower. Other equipment at the station includes an auxiliary boiler, a sulfuric acid tank, and a firewater pump. Estimated emissions from the station in tons per year, as prepared for PSD-LA-651, are as follows:

<u>Pollutant</u>	<u>Proposed Emissions</u>	<u>PSD De Minimis</u>
PM ₁₀	316.07	15
SO ₂	151.79	40
NO _x	614.28	40
CO	813.96	100
VOC	96.62	40
NH ₃	293.10	-
Methane/Ethane	139.56	-
PM (Not including PM ₁₀)	126.30	25

The emissions changes above reflect permitted emissions allowed by Permit No. PSD-LA-651. Permit No. PSD-LA-651(M-1) does not authorize any additional construction or any changes in actual emissions. PSD-LA-651(M-1) authorizes maximum emission rates of

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

nitrogen oxides and carbon monoxide, in pounds per hour, that apply during startup and shutdown of the Combustion Turbines (CTG01, CTG02, and CTG03). All emissions sources at this facility are required to continue to comply with all existing annual emission rates for all pollutants.

Estimated emissions from the station in tons per year, as prepared for PSD-LA-651(M-1), are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>	<u>PSD De Minimus</u>
PM ₁₀	316.07	442.01	+ 125.94*	15
SO ₂	151.79	151.38	- 0.41	40
NO _x	614.28	579.32	- 34.96	40
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VOC	96.62	96.54	- 0.08	40
PM (Not Including PM ₁₀)	126.30	-	- 126.30	25

* Emission change due to difference in calculation methodology. In Permit No. 2160-00111-V0, the particulate emissions from the Cooling Towers (EQTs 7 – 9) were considered to be total suspended particulate and were calculated separately from PM₁₀. In this permit, the emissions from the cooling towers are considered to be PM₁₀. If the emissions from each of the cooling towers are added to the PM₁₀ “Before” value above, the result is 442.37 tons per year. This represents a permitted decrease of 0.36 tons per year.

Further, PSD-LA-651(M-1) authorizes a revision to the NO_x and CO lb/hr and TPY emission rates for the Combined Cycle Units. Previously, these rates were 46.0 lb/hr and 201.0 TPY of NO_x as well as 61.0 lb/hr and 267.0 TPY of CO. When these rates were originally established, the underlying calculations did not account for the fact that the vendor guarantees at 100% load were lower than the emission rate relied upon in the emission calculation. Using the vendor guarantees, the NO_x emission rates were revised to 43.50 lb/hr and 190.53 TPY. The CO emission rates were revised to 58.00 lb/hr and 254.04 TPY. This results in a decrease in permitted emissions of NO_x and CO. Further PSD review is not required since this change results in a reduction in permitted emissions. This change does not represent a physical change or a change in the method of operation.

Lastly, PSD-LA-651(M-1) revises the particulate matter emission limitations that apply to the cooling towers (CT1 – CT3) to indicate that the limits apply to PM₁₀ and not total suspended particulate.

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above significance levels for new major sources requires review under PSD regulations, 40 CFR 52.21. PSD permit reviews of proposed new or modified major stationary sources require the following analyses:

1. A determination of the Best Available Control Technology (BACT);
- B. Analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;
- C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);
- D. An analysis of the PSD increment consumption;
- E. An analysis of the source related growth impacts;
- F. An analysis of source related impacts on soils, vegetation, and visibility;
- G. A Class I Area impact analysis; and
- H. An analysis of the impact of toxic compound emissions.

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a new major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

With PSD-LA-651, Ouachita Power proposes to construct an 800 MW power station near Sterlington. PM/PM₁₀, SO₂, NO_x, CO, and VOC emissions from the proposed station will be above the PSD significance levels. A BACT analysis is required for these PSD regulated pollutants.

The BACT analysis that follows was made in support of the issuance of PSD-LA-651. A

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

BACT analysis that addresses startup and shutdown was added with PSD-LA-651(M-1).

BACT analysis for NO_x

Selective catalytic reduction (SCR) is the most effective post-combustion NO_x control method considered. In this process, a reducing agent is introduced into the flue gas, up stream of a catalyst bed, which is maintained at elevated temperature.

SCONO_x technology operates at a temperature range of 300°F to 700°F. It utilizes a single catalyst system to control both carbon monoxide and NO_x. CO is oxidized to carbon dioxide while NO_x is converted to NO₂, which is adsorbed onto the surface of the catalyst. This new technology has only been used for small and medium size turbines. The system has not been demonstrated on large turbines at this time. This technology is considered technically infeasible for this application because it has not been demonstrated in practice.

XONON is a flameless catalytic system which limits the temperature in the combustor below the NO_x formation threshold. The XONON system has been tested for a 1.5 MW turbine. It has not been tested for medium or large turbines yet. The XONON system is considered technically infeasible.

Dry Low NO_x (DLN) or Low NO_x burners (LNB) are designed for distributed air flow, distributed fuel input, and minimal flame length to optimize equipment conditions and minimize NO_x levels. The amount of NO_x formed during combustion is influenced by time, temperature, and oxygen concentration. LNB reduces NO_x formation by lowering flame temperatures. No additional energy is required.

Ouachita Power proposed LNB to maintain NO_x emissions from the gas turbines to 9 ppmv and from the duct burners to 0.10 lbs/MM BTU heat input. NO_x emissions will further be controlled by an SCR with 50 percent removal efficiency. A search of the EPA RACT/BACT/LAER Clearinghouse indicates that the current BACT level for NO_x emissions from gas turbines is 9 ppmv.

Because Ouachita Power proposed the top control option (LNB/SCR) as BACT, analyses for other options (selective noncatalytic reduction, flue gas recirculation, and steam or water injection) are not required. The combination of LNB and SCR which limit NO_x emissions from turbines to 4.5 ppmv and from duct burners to 0.05 lbs/MM BTU is determined as BACT during normal operations.

Ouachita Power proposed no additional controls as BACT during periods of startup and shutdown (SUSD). During SUSD conditions, the stack gas air flow is much lower than during periods of normal operations. The air flow must be maintained within certain ranges during SUSD conditions to prevent compressor surge or compressor stall, which would damage the turbine. The SCR is designed to accommodate the higher stack gas flow rates that exist during normal operational periods. Attempting to operate the SCR during SUSD

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

conditions would necessitate a much higher ammonia flow rate in order to achieve the guaranteed level of emissions control. This higher ammonia flow rate would severely decrease the life of the catalyst and would also damage the various CEMS equipment installed on the unit. As a result, operation of the SCR during SUSD conditions was determined to be technically infeasible.

With PSD-LA-651(M-1), BACT for emissions of NO_x from the gas turbines during periods of startup and shutdown is determined to be no additional controls.

A small quantity of NO_x (11.28 tons/yr) is also emitted from the auxiliary boiler, heaters, emergency generator, and fire water pump. The auxiliary boiler and heaters will be equipped with LNB. Post combustion control for these minor sources is impractical. LNB is determined as BACT for NO_x emissions from the auxiliary boiler and heaters. Proper engine design is determined as BACT for NO_x emissions from the emergency generator and the firewater pump.

BACT analysis for CO and VOC

Thermal oxidation is the first control option considered for CO and VOC emissions. Flue gas from combustion equipment could be routed through the thermal oxidizer where the gas will be heated to an operating range of 1200 - 2000°F. At this temperature, carbon monoxide and VOC will be burned to carbon dioxide. Raising exit gas to the appropriate temperature range will require a significant amount of energy and generate a large quantity of secondary emissions. Capital and operating costs are significant.

Catalytic combustion of carbon monoxide and VOC is another control option. Flue gas can be burned in a catalyst bed at 650 - 800°F. Approximately 90 percent of the carbon monoxide and VOC would be converted to carbon dioxide. Additional energy is required to heat the flue gas and send it through the catalyst bed. The catalyst bed, containing heavy metals, requires replacement and recycling and/or disposal. Capital and operating costs are significant.

CO and VOC emissions can also be controlled using good equipment design, gaseous fuels for good mixing, and proper combustion techniques. These control options are usually less efficient than the oxidation technologies, but they have minimal environmental and economic impact.

BACT for NO_x is also considered BACT for CO and VOC, since optimizing burners for CO and VOC influences NO_x emissions. The environmental impact eliminated thermal and catalytic oxidizers as BACT for CO emissions from the turbines and duct burners.

The LNB/SCR will limit maximum CO emissions from the gas turbine to 9 ppmv and from the duct burners to 0.10 lbs/MM BTU. Maximum VOC emissions will be maintained at 1.4 ppmv (wet) for the gas turbines and 0.015 lbs/MM BTU for the duct burners. These were

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

determined as BACT for CO and VOC emissions from the gas turbines and duct burners during normal operations.

With PSD-LA-651(M-1), BACT for emissions of CO from the gas turbines during periods of startup and shutdown is determined to be good combustion practices.

A small quantity of CO (12.96 tons/yr) is also emitted from the auxiliary boiler, heaters, emergency generator, and fire water pump. Post combustion control for these minor sources is impractical. Proper combustion practices and designs are determined as BACT for CO emissions from the auxiliary boiler, heaters, firewater pump, and emergency generator.

BACT analysis for PM/PM₁₀

Control techniques for PM/PM₁₀ include cyclones, electrostatic precipitators (ESP), fabric filters, good combustion practices and use of clean fuels.

Cyclones collect particulate laden gases and force them to spin in a vortex resulting in a change in direction of the particles. The particles then drop out of the gas stream. Cyclones are generally used to reduce dust loading and collect large particles. PM/PM₁₀ emissions of very low concentrations from the generation units would not be very effectively captured in a cyclone.

ESPs operate by electrically charging particles and then separating them from the gas stream with a collector of opposite charge. High voltage direct current discharge electrodes, typically wires, are suspended in the gas stream to impose a negative charge on the particles. The particles are driven to positive collecting electrodes (typically plates) located opposite the wires. Particles are removed from the collection plates by rapping devices that strike the collection and discharge electrodes. The dust falls into hoppers and is conveyed to a disposal system. ESPs are usually used to capture coarse particles at high concentrations. Small particles at low concentrations are not effectively collected by an ESP. Capital and operating costs of an ESP are usually high.

In the fabric filter or baghouse, particle laden gas passes through the filter bags, retaining particles on the filters. The filters are periodically cleaned via shaking, reverse air flow, or pulse jet cleaning. During cleaning, particles are deposited in a hopper for subsequent disposal. Fabric filters are used for medium and low gas flow streams with high particulate concentrations. Capital costs of fabric filters is usually high.

Particulate emissions from the gas turbines and the duct burners will be 18 lbs/hr and 0.02 lbs/MM BTU, respectively, which are equivalent to 0.0035 grains/dscf. These emission levels are lower than the performance guarantee of most cyclones, or ESPs, or baghouses. Using cyclones, baghouses, or ESPs to control PM/PM₁₀ emissions from the turbines is impractical. The remaining options are good combustion practices and using clean natural gas. These are determined as BACT for particulate emissions from the gas turbines and duct

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

burners.

A small quantity of PM/PM₁₀ (1.07 tons/yr) is also emitted from the auxiliary boiler, heaters, emergency generator, and fire water pump. Post combustion control for these minor sources is impractical. Proper combustion practices and designs are determined as BACT for particulate emissions from the auxiliary boiler, heaters, firewater pump, and emergency generator.

Particulates will also be emitted from the cooling towers. A small amount of water will be entrained and carried over with exit air from the towers. Suspended solids and dissolved materials in the entrained water are emitted as particulates. The cooling towers will be designed with integrated drift eliminators to minimize drift loss. This is determined as BACT for particulate emissions from the cooling towers.

BACT analysis for SO₂

Sulfur dioxide emissions from the gas turbines and duct burners can be controlled by either using low sulfur fuels or scrubbing the flue gas using sodium bicarbonate, calcium oxide, or any other sorbents. Ouachita Power will fire the gas turbines, duct burners, auxiliary boiler, and heaters with pipeline quality natural gas having trace amounts of sulfur. This is the most efficient technique to control SO₂ emissions. Scrubbing methods are either less efficient or impractical. Using pipeline quality natural gas is determined as BACT for SO₂ emissions from the gas turbines, duct burners, auxiliary boiler, and heaters.

Low sulfur diesel is fired in the firewater pump and the emergency generator. Post combustion control for these minor sources is impractical. Using low sulfur diesel is determined as BACT for SO₂ emissions from the firewater pump and the emergency generator.

B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an analysis of existing air quality for those pollutant emissions which increase significantly from a proposed major source. PM/PM₁₀, SO₂, NO_x, CO, and VOC are pollutants of concern in this case.

Screening dispersion modeling of PM₁₀, SO₂, NO_x, and CO emissions from the proposed station indicates the maximum off-site ground level concentrations are below the corresponding significance levels and the preconstruction monitoring exemption levels. Neither preconstruction monitoring, nor increment analysis, nor refined modeling are required.

VOC emissions from the proposed station will be less than 100 tons/yr. Ambient air quality analysis for ozone and preconstruction monitoring are not required.

PRELIMINARY DETERMINATION SUMMARY

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, INC. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1), MAY 5, 2009

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Refined modeling was not required for emissions of PM/PM₁₀, SO₂, NO_x, and CO.

D. PSD INCREMENT ANALYSIS

Increment analysis was not required for emissions of PM/PM₁₀, SO₂, NO_x, and CO.

E. SOURCE RELATED GROWTH IMPACTS

Secondary growth effects include temporary construction related jobs and approximately 25 permanent jobs.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on area soils, vegetation, or visibility.

G. CLASS I AREA IMPACTS

Breton National Wildlife Area, the nearest Class I area, is more than 100 kilometers from the site, precluding any significant impact.

H. TOXIC IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

V. CONCLUSION

The Permits Division has made a preliminary determination to approve the construction of Ouachita Power Generating Plant near Sterlington, Ouachita Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, L.L.C. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1)

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated March 29, 2000 and subject to the following emission limitations and other specified conditions. Specifications submitted are contained in the application and Emissions Inventory Questionnaire dated November 11, 1999, as well as additional information received March 22 and May 18, 2000.

MAXIMUM ALLOWABLE EMISSIONS RATES								
Emission Point	Description	Operational Mode		PM ₁₀	SO ₂	NO _x	CO	VOC
CTG01 CTG02 CTG03	Gas Turbine	Normal	ppmv	-	-	4.5	9	1.4
		Normal	lbs/MMBTU	-	0.006	-	-	-
		Normal	lbs/hr	18	-	-	-	-
		SU/SD		-	-	200	2000	-
	Duct Burner	Normal	lbs/MMBTU	0.02	0.006	0.05	0.10	0.015
	Combined Cycle Generation Unit (each) 170 MW/300 MMBTU/hr	Normal All	lbs/hr TPY	24.0 105.0	11.5 50.3	43.5 190.53	58.00 254.04	7.3 32.0
CT1 CT2 CT3	Cooling Tower (each) 80,000 gpm	All All	lbs/hr TPY	9.6 42.1	-	-	-	-
HTR01 HTR02 HTR03	Heater (each) 5.0 MM BTU	All All	lbs/hr TPY	0.04 0.18	0.003 0.02	0.25 1.1	0.60 2.6	0.01 0.05
DFP	Diesel Firewater Pump	All All	lbs/hr TPY	0.04 0.01	0.39 0.01	3.9 0.98	0.17 0.05	0.13 0.04
SUB	Auxiliary Boiler	All All	lbs/hr TPY	0.26 0.39	0.21 0.31	1.7 2.6	2.9 4.3	0.19 0.28
DG	Emergency Generator	All All	lbs/hr TPY	0.52 0.13	1.70 0.42	17.50 4.40	3.20 0.81	0.60 0.15

SPECIFIC CONDITIONS

OUACHITA POWER GENERATING PLANT ENTERGY ARKANSAS, L.L.C. STERLINGTON, OUACHITA PARISH, LOUISIANA PSD-LA-651(M-1)

Normal and SU/SD operational modes are defined as follows:

Normal Operational Mode: Any period of actual unit operation that is not SU/SD (or an upset or malfunction condition). For normal operations, the permitted maximum hourly and average hourly emission rates are equal.

Startup/Shutdown (SU/SD) Operational Mode: Startup is defined as the time from initial firing of the unit until the point at which the unit has achieved an operational temperature of 2280°F. Normal Operational Mode begins once the unit has achieved 2280°F. Shutdown is defined as the time that begins once the unit, after having achieved Normal Operational Mode as described above, lowers its operating temperature below 2230°F and ends once the unit has ceased all fuel combustion.

2. Permittee shall ensure compliance with the opacity and particulate emission limits of this permit by visually inspecting the combined cycle generation units, Emission Points CTG01, CTG02, and CTG03, for opacity on a weekly basis. If visible emissions are detected, then, within three (3) working days, the permittee shall conduct a six minute opacity reading in accordance with EPA Reference Method 9. Records of visible emission checks shall include emission point ID, date visual check was performed, a record if visible emissions were detected, and a record of any Method 9 testing conducted and the results of any Method 9 test. These records shall be kept on site and available for inspection by the Office of Environmental Compliance, Surveillance Division.
3. To ensure compliance with permitted emission limits, a stack test shall be performed on the gas turbines and the duct burners, Emission Points CTG01, CTG02, and CTG03. The following test methods and procedures from New Source Performance Standards, 40 CFR 60, Appendix A, shall be used:
 - a. PM, NO_x, and SO₂ by methods and procedures specified by 40 CFR 60.48a(f) and 60.335(c).
 - b. Carbon Monoxide by Method 10-Determination of Carbon Monoxide emissions from Stationary Sources.
 - c. Opacity by Method 9-Visual Determination of Opacity of Emissions from Stationary Sources.
 - d. VOC by Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer

The tests shall be performed on the turbines without the duct burners to obtain the actual emission rates from the gas turbines. The test shall be repeated with both the gas turbines and the duct burners in operation. Emissions from the duct burners are obtained by subtracting the turbine emissions from the total emissions of each combined cycle generation unit.

4. Permittee shall comply with the Louisiana General Conditions as set forth in LAC 33:III.537.

